

Patent claims

1. Prosthesis for replacing the surface in the area of a ball of ball [-and-socket] joints, whereby the prosthesis (1) has a spherical shell section (2) with an outer surface (3) configured to lie in an articular fossa, and for attachment and/or for better distribution of support forces has a crown (5), which subdivides a cavity of the spherical shell section (2) formed for admitting a bone end in essence into a first cavity (13) and a second cavity (14), characterized in that the spherical shell section (2) in essence has the form of a hemisphere or preferably a section of a hemisphere, and that the free edge of the crown (5) in essence runs in the same plane as the free edge of the spherical shell section (2).

2. Prosthesis according to claim 1, characterized in that the free edge of the crown (5) projects by up to 5 mm and particularly 1 to 3 mm over the plan in which the free edge of the spherical shell section (2) runs.

3. Prosthesis according to claim 1, characterized in that the free edge of the crown does not reach the plane in which the free edge of the spherical shell section runs, and from it especially has a distance of up to 5 mm, particularly of 1 mm to 3 mm.

4. Prosthesis according to one of claims 1 to 3, characterized in that the spherical shell section has a height h, which is 65% to 90% of the ball radius, and especially 70% to 85% and especially about 80% of the ball radius.

5. Prosthesis according to one of the foregoing claims, characterized in that a diameter of the crown (50) is 45 to 75 percent, particularly 55 to 65

percent and particularly about 60 percent, of a diameter of the spherical shell section (2).

6. Prosthesis according to one of the foregoing claims, characterized in that an inner surface (4) of the spherical shell segment (2) and/or a surface of the crown (5) is configured for a contact and/or an intergrowth with a bone, and for this is particularly rough.

7. Prosthesis according to one of the foregoing claims, characterized in that the crown (5) has at least one recess (9), particularly five to ten recesses (9).

8. Prosthesis according to one of the foregoing claims, characterized in that the crown (5) has a relief on an outer surface (6) and/or inner surface (7), especially a fluting (8), which is formed from the ring beads running around the crown (5).

9. Prosthesis according to one of the foregoing claims, characterized in that the spherical shell section (2) on an inner surface (4) has a relief, especially a fluting, which runs along an edge of the spherical shell section (2).

10. Prosthesis according to one of the foregoing claims, characterized in that it is configured [to be] screwed on or in, whereby the crown (5) and/or an inner surface (4) of the spherical shell section (2) has a thread and the prosthesis (1) especially has notches and/or flattened areas as working surfaces for a turning tool.

11. Prosthesis according to one of the foregoing claims, characterized in that a ground plan of the crown (5) has a shape of a circle or of an in essence regular polygon, and especially that the free end has an in essence cylindrical section (16).

12. Prosthesis according to claim 11, characterized in that the crown (5) is arrayed in essence coaxially

to an edge of spherical shell section (2).

13. Prosthesis according to one of the foregoing claims, characterized in that spherical shell section (2) and crown (5) are one-piece-configured together and/or are welded to each other.

14. Prosthesis according to one of the foregoing claims, characterized in that spherical shell section (2) and crown (5) are configured as individual pieces and are connected to each other by a mechanical attachment medium, particularly by a screw threading, a bayonet joint or a clamping device.

15. Procedure for implantation of a prosthesis according to one of the foregoing claims, characterized in that a bone is first spalled and/or milled, then a groove in the bone is prepared for the crown (5) and thereafter the prosthesis (1) is pressed on and/or pounded into the bone.

16. Material set for manufacturing a prosthesis according to claim 14, characterized in that it includes various types [of] spherical shell sections (2) according to claim 14 and various types [of] crowns according to claim 14, whereby the spherical shell sections (2) and the crowns (5) can each be attached to each other in various combinations to create specially adapted prostheses (1).

17. Set of prostheses according to one of claims 1 to 14, which set of prostheses with spherical shell sections are formed of diameters that differ from each other, but especially [with] equal relationship of the height h of the spherical shell section to each ball diameter, at which the diameter of each crown in essence amounts [to] the same percentage of the diameter of the spherical shell section.